

Primary inflammation of an epiploic appendix of the ascending colon. Is atypical presentation a reason for emergency laparotomy?

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Rezumat

Inflamație primară a unui apendice epiploic al colonului ascendent. Este prezentarea atipică un motiv pentru laparotomia de urgență?

Durerea abdominală de cadran inferior drept este un simptom foarte comun în practica clinică zilnică, având etiologie variabilă. La pacienții sosiți în camera de urgență cu durere de cadran inferior drept instalată brusc, cauza cea mai frecventă este apendicita acută. Inflamația primară a apendicelui epiploic, entitate rară, cu aspect clinic asemănător cu alte cauze de abdomen acut, care apar spontan, poate constitui o problemă în diagnosticul diferențial pentru că este o situație care se tratează mai bine conservator. Diagnosticul exact este esențial pentru tratamentul conservator. Prezentăm cazul unei paciente de 62 ani cu inflamație primară a unui apendice epiploic de colon ascendent care s-a prezentat cu abdomen acut și a suferit o laparotomie exploratorie cu diagnosticul de apendicită acută.

Cuvinte cheie: inflamație acută de apendice epiploic, colon ascendent

Abstract

Right lower quadrant pain is a very common symptom in everyday clinical practice, and of variable etiology. In patients arriving in the emergency room with sudden-onset right lower quadrant pain, the commonest cause is acute appendicitis. Primary epiploic appendagitis, a rare entity, with a clinical presentation similar to other causes of acute abdomen, and one that subsides spontaneously, can constitute a problem in differential diagnosis, because it is a condition best treated conservatively. The exact diagnosis is a prerequisite for conservative treatment. We present the case of a 62 year old woman with primary epiploic appendagitis of the ascending colon that presented as acute abdomen, who underwent an exploratory laparotomy with the preoperative diagnosis of acute appendicitis.

Key words: acute epiploic appendagitis, ascending colon

Introduction

Epiploic appendagitis may be primary, usually due to torsion and ischemia or spontaneous venous thrombosis, or secondary due to spread of inflammation of adjacent organs (1-3). It is extremely rare, it usually manifests with intense abdominal pain, and usually mimics the clinical presentation of diverticulitis when the pain is located in the left lower quadrant or acute appendicitis, when the pain is located in the right lower quadrant. It is usually not diagnosed preoperatively, and for this reason, not treated conservatively as indicated, due to a low index of suspicion for this entity on behalf of the surgeon. The diagnosis is usually established intraoperatively during laparotomy/laparoscopy in patients operated for acute abdomen. (4-6)

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We present the case of a patient with primary epiploic appendagitis of the ascending colon, with a clinical presentation of acute abdomen who underwent an exploratory laparotomy under the initial diagnosis of acute appendicitis, with the aim of presenting and discussing of the questions and problems regarding the preoperative diagnosis of this disease and the indicated treatment.

Case presentation

A 62 years old woman arrived at the emergency department complaining of acute-onset, intense pain in the right abdomen beginning 4 days ago and subsiding with the administration of analgesics. She denied any fever, nausea, vomiting, constipation or diarrhea. Her history included a total hysterectomy 20 years ago for uterine fibromyoma and arterial hypertension under medication.

On physical examination, the patient was normotensive (B.P. 120/70 mmHg), tachycardic (96 pulses/min) and afebrile (axillary temperature 36.5°C), with tenderness on palpation of the right abdomen, a positive McBurney's sign and rebound tenderness on the right lower quadrant. Digital rectal examination showed tenderness in the pouch of Douglas. The tongue was furred. Bowel sounds were normal. Physical examination was negative for hernias or other abnormalities.

Laboratory workup showed a hematocrit of 39%, platelets $357.000/mm^3$ and leukocytosis ($16500/mm^3$) of a polymorphonuclear type (89%). Chest and abdominal radiographs showed no abnormal findings. EKG showed sinus tachycardia.

Based on patient's history, clinical examination and laboratory findings, the initial diagnosis was of acute appendicitis with the probability of an atypical location, so no further workup was performed and the patient underwent an exploratory laparotomy. Due to the patient's obesity and atypical clinical presentation, a vertical transrectal incision was made, the peritoneum was opened, and a normal, uninflamed, intact appendix was identified. An inflammatory mass was identified, firmly adhered to the anterior ascending colon and the parietal peritoneum. The mass was easily detached from the parietal peritoneum and the ascending colon, and an inflamed segment of the major omentum adhered to the mass was identified, and was resected en bloc with the mass. After the resection, an appendectomy was performed, despite absence of inflammation. There were no findings of diverticular disease or Meckel's diverticulum. The patient had an uneventful postoperative course and was discharged on the 4th postoperative day.

On macroscopic examination, the resected specimen of the epiploic appendage measured 8.5 x 4.2 x 2 cm, had a soft texture, brown color and in the subsequent sections reddish in some location. On microscopic examination, it showed a picture similar to adipose tissue, with the presence of dilated blood vessels and foci of thrombosis, hemorrhage and necrosis. Sparse inflammatory infiltrations by lymphocytes, plasma cells, histiocytes and neutrophil polymorphonuclear

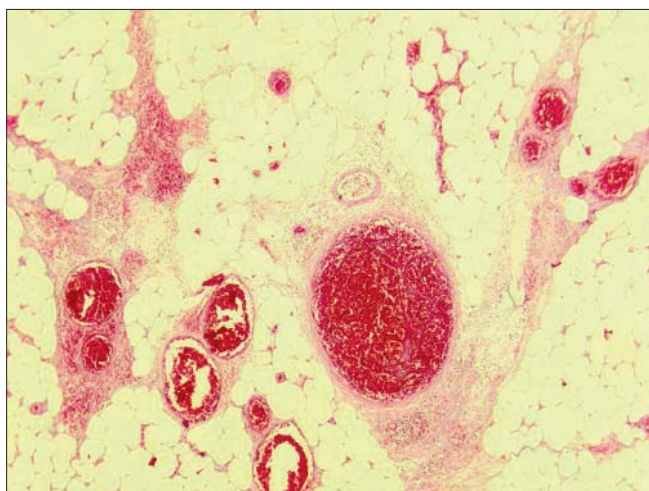


Figure 1. Epiploic appendage, H&E stain, x400 magnification: Intense vasodilatation, recent interstitial hemorrhagic infiltration, edema

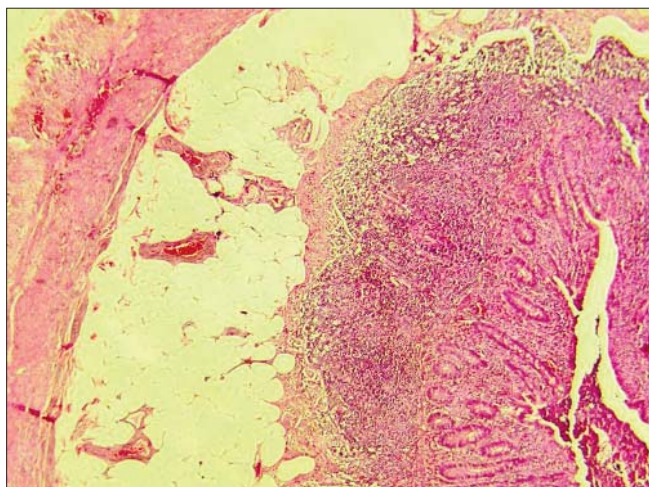


Figure 2. Appendix vermiformis, H&E stain, x400 magnification: Absence of inflammatory infiltrates

cells were also observed (Fig. 1). The resected segment of the major omentum showed similar inflammatory infiltrations and necrotic foci, as well as marked fibroblastic reaction, while the appendix vermiformis was free of inflammation (Fig. 2).

Discussion

Epiploic appendices/appendages were described for the first time by Vesalius in 1543. Lynn (7) described primary epiploic appendagitis for the first time in 1956. According to his conclusions, the anatomy of the epiploic appendages creates the conditions for their easy torsion, torsion being the commonest cause of inflammation. The rotation of the epiploic appendage around its longitude leads to edema, reduction of arterial supply, obstruction of venous drainage, thrombosis and ischemic necrosis of the appendage, leading to signs of

peritoneal irritation (8, 9).

Other causes of inflammation of the epiploic appendages include spontaneous spiral vein thrombosis, lymphadenoid hyperplasia and primary bacterial contamination due to acute diverticulitis, acute cholecystitis, acute salpingitis, acute pancreatitis and Crohn's disease. It is more frequent in adults, 20-50 years of age (extreme ages 12 and 82 years old), with an equal incidence in both sexes, with a slight predominance in the male sex (10). A characteristic of this disease is the localized, non-radiating abdominal pain, which usually is not accompanied by nausea, vomiting, or constipation/diarrhea (7,10,11). Vlahakis (12) reports that the pain is usually located in the right upper quadrant, despite the fact that 53% of inflamed epiploic appendages are located in the sigmoid colon. In contrast, Legome (13) and Lervet (14) report that the majority of cases with epiploic appendagitis present with pain in the left lateral abdominal area. Local peritonitis is rare, while only 10-30% of patients have a palpable abdominal mass. The pain of epiploic appendagitis has no typical characteristics and usually mimics the pain of acute appendicitis or acute diverticulitis (10,11). However, the pain accompanying epiploic appendagitis is not migratory, in contrast with the initial stages of acute appendicitis, while diverticulitis is usually accompanied by changes in bowel habits. These data may help in the differential diagnosis of the disease during physical examination. Our patient presented with intense right lower quadrant and right abdominal pain, which begun 4 days ago, without migration or reflection, and intense tenderness and resistance on palpation.

An element suggestive of another disease entity besides acute appendicitis was the long duration of pain without other symptoms, in contrast with the signs of local tenderness and guarding, which led to the decision for an exploratory laparotomy.

Primary epiploic appendagitis recedes spontaneously and may be treated conservatively. Symptoms usually subside in 7-14 days. A prerequisite for conservative treatment is the exact diagnosis and the exclusion of conditions that cause acute abdomen. (13,15)

Abdominal computed tomography scanning may provide exact information to establish the diagnosis in more than 60% of cases, showing an ovoid, clearly circumscribed mass usually located adjacent to the colon, inside a thin, circumferential hyperdense ring which is the inflamed peritoneum of the epiploic appendage, and the presence of a small spherical hyperdense lesion in the center of the ovoid adipose mass, which is attributed either to the thrombosed spiral vein of the appendage, or to hemorrhage. Additional findings include contamination of the periappendiceal adipose tissue, thickening of the lateral peritoneum and stenosis of the lumen of the adjacent colon (5,6,16,17). During ultrasonography, which may lead to diagnostic suspicion of the disease in 33-35% of cases, the inflamed epiploic appendage is shown as a solid hyperechoic ovoid mass contained within a thin hypoechoic ring (17,18). In our patient no ultrasonographic or computed tomography scanning were performed due to low suspicion for this disease, but also due to the presence of

marked clinical signs of local peritonitis.

The treatment of primary epiploic appendagitis is still controversial. It is described as spontaneously subsiding in approximately 10 days of administration of anti-inflammatory drugs (11). The majority of authors characterize this disease as one with a good course and responsive to conservative treatment. However, a recurrence of the disease is reported in 40% of cases (10). Besides, the findings from imaging studies do not correlate with the diagnostic criteria for this disease in all cases, leading to the necessity of an exploratory laparotomy or laparoscopy, especially in cases with intense signs and symptoms (19). In our patient, due to her intense and prolonged symptoms, surgery was considered mandatory, and she underwent an exploratory laparotomy, with the preoperative diagnosis of complicated acute appendicitis. Laparoscopy was not considered an option due to the patient's previous history of lower abdominal surgery. We believe that the extent of the inflammation confirmed the choice for surgery.

In conclusion, primary epiploic appendagitis mimics conditions causative of acute abdomen. The exact diagnosis and the exclusion of acute abdomen conditions, based on computed tomography scanning and ultrasonography, would lead to the avoidance of an unnecessary exploratory laparotomy.

Alternatively, in cases where imaging studies do not provide an exact diagnosis, laparoscopy is the ideal choice. Finally, exploratory laparotomy is the solution in conditions where laparoscopy is not recommended or inapplicable.

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